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ORIGINAL ARTICLE

Patients' attitudes toward artificial intelligence in dentistry and their trust in dentists

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Abstract

Objectives This study intended to evaluate patients' attitudes toward the use of AI in dental radiographic detection of occlusal caries and the impact of AI-based diagnosis on their trust in dentists.

Methods A total of 272 completed questionnaires were included in this study. In the first part of the study, approval was obtained from the patients, and data were collected about their socio-demographic characteristics. In the second part the 11-item Dentist Trust Scale was applied. In the third and fourth parts, there were questions about two clinical scenarios, the patients' knowledge of attitudes toward AI, and how the AI-based diagnosis had affected their trust. Evaluation was performed using a Likert-type scale. Data were analyzed with the Chi-square, one-way ANOVA, and ordinal logistic regression tests ($p < 0.05$).

Results The patients believed that "AI is useful" (3.86 ± 1.03) and were not afraid of the use of AI in dentistry (2.40 ± 1.05). Educational level was considerably related to the patients' attitudes to the use of AI for dental diagnostics ($p < 0.05$). The patients stated that "dentists are extremely thorough and careful" (4.39 ± 0.77).

Conclusions The patients displayed a positive attitude to AI-based diagnosis in the dental field and appear to exhibit trust in dentists. The use of Al in routine clinical practice can provide important benefit to physicians as a clinical decision support system in dentistry and understanding patients' attitudes may allow dentists to shape AI-supported dentistry in the future.

Keywords Artificial intelligence · Communication · Diagnosis · Dentist trust · Machine learning · Patients

Introduction

Dental caries is a serious issue for oral health in most developing and underdeveloped nations, despite being preventable and curable [1]. Early and effective detection of dental caries can be essential for timely and successful treatment. Visual–tactile assessments and radiographic examinations are readily able to detect the large, conspicuous tooth cavities caused by caries. Three popular radiograph types are routinely utilized in daily clinical practice: bitewing, periapical, and panoramic [2]. For occlusal caries, which has been termed "hidden caries" because it can be missed during a visual examination but subsequently detected radiographically, panoramic radiography is used in general dental practice [1]. Digital imaging, light-emitting diode technology, fiber-optic transillumination, fluorescence cameras, and lasers are among the other tools that have been employed to identify dental caries [3, 4]. With the development of digital technology, the automated diagnostic instruments used for dental caries have changed and over the past few decades scientists have increasingly tried to apply artificial intelligence (AI) techniques for the detection of dental diseases [5].

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AI refers to the general concept of creating computer systems that are able to perform tasks that have ordinarily necessitated human intelligence [6]. Artificial neural networks (ANNs) are among the many AI technologies by which classification is often carried out, particularly by the subtype named convolutional neural networks (CNNs) [7]. CNNs are currently the most popular deep learning (DL) model types in dental and medical imaging [8]. As the technology has advanced, AI has assumed significant roles in healthcare, offering superior success and convenience in several areas, including diagnosis [9]. AI offers a notable advantage over dentists in terms of diagnostic speed. This can be especially helpful for adult and pediatric patients with anxiety disorders, as it minimizes the amount of time required in the dentist's chair and causes them less stress [10].

It has, however, been difficult to adopt AI as a significant technological system in dentistry due to the scarcity of data, the reproducibility of methodological issues, and the narrow functionality of existing AI systems. Furthermore, there are still moral and legal issues to be resolved; discussions about data privacy, security, efficacy, and liability remain intense and ongoing [11]. A multitude of factors has thus influenced the integration of AI in dental care. Among these, the most crucial are dental patients themselves [12]. AI applications have the potential to either increase or decrease patients' confidence in dental diagnostics and, hopefully, to improve their comprehension of their dentists' decisions [12]. However, it will be the attitudes of clinicians and patients that determine the extent to which AI solutions are adopted in dental fields [13]. A thorough understanding of patients' needs, expectations, and fears is therefore crucial to comprehend how all these various factors may either facilitate or hinder the use of AI in healthcare [14]. The objective of the present cross-sectional study was thus to determine patients' attitudes toward using AI in dentistry and their trust in AI-based diagnosis and communication. In addition, we aimed to evaluate their trust in their dentists. The null hypothesis was that patients' attitudes toward AI in dentistry would neither influence their trust in AI-based diagnosis and communication nor impact their trust in dentists.

Materials and methods

On the basis of data published in a previous study [12], the lowest sample size requirement was calculated using the G*Power 3.1 statistical software program (Heinrich Heine, University of Dusseldorf, Dusseldorf, Germany) with an effect size of 0.3, and a beta power of 0.95. The minimum overall sample size was calculated as $n = 272$.

This cross-sectional study was performed on volunteer patients aged > 18 years with advanced occlusal caries, who visited the clinic of restorative dentistry between April 1, 2023, and January 01, 2024, were able to read Turkish, and had no visual impairments. In total, 272 completed questionnaires were included in this study. Each patient was given the questionnaire by a dentist and had the opportunity to ask questions prior to and while completing the questionnaire. The patients returned the questionnaires before they left the clinic. The questionnaires took an average of 15–20 min to complete, and the patients filled them out while they waited for or after receiving treatment. Before completing the questionnaire, patients who were unfamiliar with AI were given a brief overview of the field, which stated that AI was "The theory and development of computer systems that can carry out tasks that would ordinarily need human intelligence, including recognizing speech, understanding images, making decisions and translating languages."

The face-to-face questionnaire used consisted of four parts. In the first part, approval was obtained from the patients. The second part included questions about the socio-demographic characteristics of the patients, including their birth date, gender, and level of education. It also included the Dentist Trust Scale [15]. The third and fourth parts contained questions about two clinical scenarios. In the third part, the first clinical scenario (control) showed patients what would conventionally be done clinically (without AI) on their radiograph. In the fourth part, a second clinical scenario was presented that involved the use of AI-based radiograph, with the caries lesion highlighted by an arrow that resembled the diagnosis of the caries lesion which had already been recognized by AI-based software program (Fig. 1). The applied AI-based software

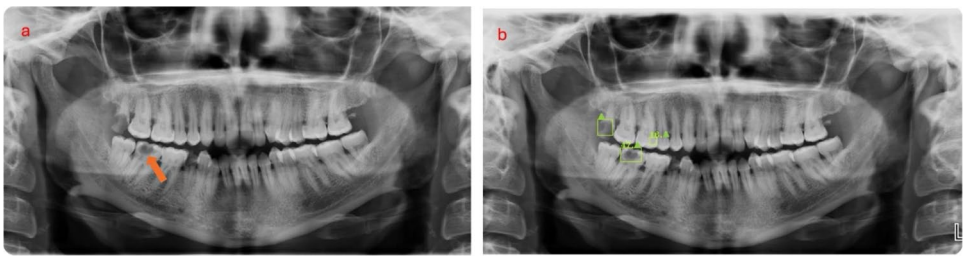

Fig. 1 The radiographs shown in the two clinical scenarios. **a** Conventional diagnosis (orange arrow). **b** AI-based diagnosis (indicating pixel blob in green by an Al-based software program)

program, Dentistoday, uses successful deep neural network architectures to interpret radiographs with high accuracy [7].

The introduction to the first clinical scenario was as follows: "Patients are shown their own radiograph by the dentist, also explains to you that this an advanced occlusal caries lesion that needs to be removed and replaced with a filling (orange arrow) (Fig. 1)." The patients were then asked to rate their ability to see the diagnosis and understand it [13].

In the next part, the introduction to the second clinical scenario was as follows: "Computer software that uses AI can examine radiographs and identify tooth decay, root inflammation, bone loss, and other pathologies. With a single click, the computer software can do all of this on its own, without the dentist's assistance. These pathologies are then marked in color by the AI. The area where the carious lesion is seen is colored green by the AI (Fig. 1)".

Afterward, the same radiograph with an AI-generated colored overlay was used in the second clinical scenario. The patients were shown their radiograph, which displayed an advanced occlusal caries lesion. They were then asked to confirm whether they agreed with the diagnosis made by the program and whether they agreed to have the caries removed and replaced with a filling by the dentist.

Afterward, the patients were asked to evaluate their attitudes toward the use of AI for diagnosis in dentistry [13]. Evaluation for two clinical scenarios was carried out using a Likert scale (1 = "strongly disagree", 2 = "disagree", 3 = "neither agree nor disagree", 4 = "agree", 5 = "strongly agree").

Statistical analysis

Descriptive statistical analysis was carried out using the SPSS for Windows 26.0 (IBM, Armonk, NY, USA). The Pearson Chi-square test was utilized to calculate group differences. Relationships between the scales applied and categorical variables related to gender and level of education were tested using the independent sample's t test and one-way ANOVA. In addition, ordinal logistic regression (OLR) was used to evaluate the impact of patients' socio-demographic characteristics on their ability to see the diagnosis and to understand it. The p value was set at $p < 0.05$. To evaluate the model performance, the data of the test set were statistically analyzed, including sensitivity (SEN), specificity (SPEC), positive predictive value (PPV), negative predictive value (NPV), true positive (TP), false positive (FP), false negative (FN), true negative (TN), F1 score, and the area under the ROC curve (AUC). In addition, the metrics equations were calculated as follows [6]:

$$\mathbf{SEN} = \mathrm{TP}/\mathrm{TP} + \mathrm{FN},$$
$$\mathbf{SPEC} = \mathrm{TN}/\mathrm{FP} + \mathrm{TN},$$
$$\mathbf{PPV} = \mathrm{TP}/\mathrm{TP} + \mathrm{FP},$$
$$\mathbf{NPV} = \mathrm{TN}/\mathrm{FN} + \mathrm{TN},$$
$$\mathbf{F1score} = 2 * \mathrm{PPV} * \mathrm{SEN}/\mathrm{PPV} + \mathrm{SEN}.$$

Results

A total of 272 patients (165 female (60.7%) and 107 male (39.3%)) in this study completed the whole data collection form. The average age of the patients was 28.54 ± 8.01 years. Overall, 61 (45.7%) had a university degree and 24 (8.8%) had a master's degree, while 187 (68.8%) had primary or high school diplomas. The average scores of the patients with a master's degree regarding their attitudes toward AI were found to be higher than those of patients at other educational levels ($p = 0.026$) (Table 1).

Descriptive statistics and response frequencies for the 11-item Dental Trust Scale (DTS) are shown in Table 2. Most patients' answers to the items were scored three or more. Item 3 that "dentists are extremely meticulous and careful" was found to have the highest score (4.39 ± 0.77).

The patients felt insufficiently well informed about caries and the need for fillings (Feel Informed) (4.43 ± 0.68). However, they believed that the dentist could make a correct diagnosis of caries and suggest an appropriate filling (Believe) (4.43 ± 0.77) (Table 3).

Overall, the patients believed that "AI is useful" (3.86 ± 1.03) and had no fears about the use of AI in dentistry (2.40 ± 1.05). The patients believed that Al could help evaluate radiographs (4.05 ± 0.90) and that they were eager to find out the results of their radiographs (4.23 ± 0.87) (Table 4).

In terms of the scales and variables, a positive relationship was found between the scales and all variables except for age ($p < 0.05$). There was only a statistically significant negative relationship between the age of the patients and the "seeing" variable (r: -0.124, $p < 0.05$) (Table 5).

Those patients with a university degree responded more positively to the "trust" variable than patients' with only a primary school education (-0.663 ($-1.364/-0.003$)). Patients with only a primary school education (0,830 (0,221/-1,426)) and who were male (0.562 (0.131/−1.038)) responded more positively to "Feel Unable" than patients with university degrees (Table 6).

The AI program detected occlusal caries at an SEN of 0.893, an SPEC of 1, a PPV of 1, an NPV of 0, and an F1 score of 0.94.

Table 1 Evaluation of the Dentist Trust Scale and the perspective on artificial intelligence according to socio-demographic characteristics

		N	95% confidence interval	Mean ± S. D	*t*/*F*	*p*
Dentist Trust Scale	Male	107	3.98–4.19	4.08 ± 0.54	0.700	0.485
	Female	165	3.95–4.12	4.03 ± 0.53		
The perspective on artificial intelligence	Male	107	3.44–3.58	3.51 ± 0.36	1.776	0.077
	Female	165	3.36–3.49	3.42 ± 0.42		
Dentist Trust Scale	Primary school	66	3.86–4.16	4.01 ± 0.63	1.605	0.188
	High school	121	3.99–4.18	4.08 ± 0.48		
	University degree	61	3.99–4.25	4.12 ± 0.48		
	Master's degree	24	3.64–4.08	3.86 ± 0.51		
The perspective on artificial intelligence	Primary school	66	3.24–3.49	3.37 ± 0.51[a]	3.146	**0.026***
	High school	121	3.39–3.52	3.45 ± 0.35[a]		
	University degree	61	3.38–3.58	3.48 ± 0.39[a]		
	Master's degree	24	3.53–3.79	3.66 ± 0.31[b]		

*Different lowercase letters indicate statistically significant differences ($p < 0.05$)

Table 2 Descriptive statistics and frequency of individual items from the Dental Trust Scale [15]

Item	Mean	SD	Response frequencies (%)				
			1 ('strongly disagree')	2	3	4	5 ('strongly agree')
1. Dentists care about their patients' health just as much or more as their patients do	4.16	1.07	6.6	1.8	5.1	41.9	44.5
2. Sometimes, dentists care more about what is best for them than about patients' dental needs*	3.04	1.34	17.3	20.6	17.6	29.8	14.7
3. Dentists are extremely thorough and careful	**4.39**	**0.77**	2.2	0.0	4.4	43.8	49.6
4. Patients completely trust dentists' decisions about which dental treatments are best	4.33	0.81	1.5	1.8	7.0	41.5	48.2
5. Dentists are totally honest in telling their patients about all the different treatment options available for their conditions	4.26	0.88	2.2	3.3	5.9	43.4	45.2
6. Dentists think only about what is best for their patients	4.22	0.85	1.5	3.7	7.7	45.2	41.9
7. Sometimes, dentists do not pay full attention to what patients are trying to tell them*	**3.51**	**1.20**	6.3	18.8	14.3	39	21.7
8. Dentists always use their very best skill and effort on behalf of their patients	4.32	0.83	2.6	1.1	4.8	44.5	47.1
9. Patients have no worries about putting your oral health in the hands of the dentist	4.27	0.83	1.5	2.2	8.8	43.0	44.5
10. A dentist would never mislead the patient about anything	3.93	1.01	2.6	8.5	14.0	43.8	31.3
11. All in all, patients trust dentists completely	4.20	0.82	1.1	2.6	11.4	45.2	39.7

*Items 2 and 7 in DTS were reverse coded and included in the analysis. SD = standard deviation

Table 3 Findings of the control investigation [12]

Statement	Variable	Mean (SD)
"I can see the disease (caries) on the radiograph"	See	4.07 (0.95)
"I believe that my dentist can make a correct diagnosis (caries) based on radiograph and suggest an appropriate therapy (filling)"	Believe	**4.43 (0.77)**
"I understand that the disease (caries) seen on the radiograph needs treatment"	Understand	4.41 (0.74)
"I trust the decision my dentist has made based on the radiograph"	Trust	4.38 (0.70)
"I feel adequately informed about the condition (caries) and the need for a therapy (filling)"	Feel informed	**4.43 (0.68)**
"I have the feeling that I cannot make a decision on my own, and I feel at the mercy of my dentist"	Feel unable	3.43 (1.26)

*The mean (standard deviation) Likert scale values (from 1—strongly disagree to 5—strongly agree) are shown

Table 4 Descriptive analysis of patients' attitudes toward AI application in dentistry [12]

Statement	Mean(SD)
"AI is useful"	3.86 (1.03)
"In principle. I would prefer to rely on humans rather than robots or AI."	3.79 (1.06)
"I have security concerns about using AI."	3.06 (1.04)
"AI makes life easier."	3.95 (0.91)
"I believe AI improves people's quality of life."	3.72 (0.99)
"I am scared of the topic and its consequences"	2.83 (1.07)
"I would base the choice of my dentist on whether he/she uses AI-based assistance systems or not."	2.82 (1.08)
"If my dentist doesn't use AI-based assistance systems. I would switch to another dentist."	2.57 (1.00)
"The use of AI in dentistry scares me."	2.40 (1.05)
"I think that AI will support dentists' diagnostics in the future."	3.90 (0.95)
"AI can prevent incorrect treatment."	3.64 (0.97)
"I can have more confidence in a dentist's diagnosis when it's assisted by AI."	3.71 (1.00)
"I believe AI can serve as a quality control for the dentist's diagnosis."	3.88 (0.92)
"I would feel safer with a dentist if AI were used."	3.40 (1.11)
"I fear that AI can make mistakes and lead to wrong decisions by the dentist."	3.03 (1.05)
"I fear that a dentist would rely solely on AI to diagnose."	3.10 (1.12)
"I think that some problems with my teeth could have been prevented if the dentist had worked with AI to assist."	3.29 (1.04)
"I find it important to have a good understanding of the results of a radiograph."	**4.23 (0.87)**
"I would pay something for an AI-assisted radiograph analysis."	2.89 (1.15)
"I think it's important to know how AI works when it is used on my radiograph."	3.85 (0.91)
"I think it's important that I. as a patient. am shown what is conspicuous in a radiograph."	4.19 (0.82)
"Humans and AI can complement each other."	3.94 (0.92)
"AI can help dentists evaluate radiographs."	**4.05 (0.90)**
"In my opinion. people make more mistakes than computers."	2.86 (1.03)

*The mean (standard deviation) Likert scale values (from 1—strongly disagree to 5—strongly agree) are shown

Discussion

The current study evaluated how patients felt about the use of AI for detecting occlusal caries in dental radiography, their trust of AI, and their trust in dentists. The findings suggested that they trusted the use of Al for occlusal caries detection in dental radiography and had no fear about the usage of Al in dentistry, leading to the null hypothesis being rejected. In dentistry, AI programs are most utilized for patient management, including risk assessment and analysis, diagnosis, treatment planning and decision-making, outcome prediction, laboratory work, and treatment evaluation [13]. The perceptions and attitudes of dentists and patients toward the further successful application of AI in healthcare will play a major role in how it develops. There has been much research [11, 16–19] on how dentistry and medical students perceive AI, but little research so far including patients [12]. One previous study found that AI-based diagnosis helped patients understand, believe, and trust their dentist's radiographic diagnosis [12]. These results are consistent with those of the present study. Another study found that the use of an AI program in the field of dentistry could pose new challenges to the relationship of trust between the dentist and the patient [13].

The patients seemed to trust that they had been adequately informed about their caries and the need for a filling (Feel Informed), and that their dentists were able to make a correct caries diagnosis and suggest an appropriate filling (Believe). One can speculate that the use of AI increased confidence in the diagnosis of the dentist and their treatment recommendations, and it is also reasonable to assume that the patients participating may have gained a better understanding of the link between the demonstrated caries lesion and the need for treatment [12]. The AI program tested in our study demonstrated superior detection of occlusal caries, as assessed using F1 score value of 0.94. Prior to the scales, we demonstrated how current Al software program outcomes look and how they work. Patients evaluated radiography images that had been assessed by the Al software program and highlighted with colors. This had a significant positive impact on the patients' comprehension of radiographs and their confidence in the ensuing diagnostic and treatment procedures [14].

Pauwels et al. documented decreased skepticism of AI after a lecture on the topic [20]. Patients' negative attitudes

Table 5 Results of correlation analysis

	Mean ± S. D	Dentist Trust Scale	The perspective on artificial intelligence	See	Believe	Understand	Trust	Feel informed	Feel unable	Age
Dentist Trust Scale	4.06 ± 0.54	1	**0.149****	**0.224****	**0.530****	**0.546****	**0.630****	**0.562****	**0.147****	0.008
The perspective on artificial intelligence	3.46 ± 0.40		1	**0.219****	**0.180****	**0.217****	**0.218****	**0.226****	0.112	−0.190
See	4.07 ± 0.95			1	**0.357****	**0.499****	**0.294****	**0.384****	0.109	**−0.124****
Believe	4.43 ± 0.77				1	**0.576****	**0.598****	**0.587****	0.117	−0.043
Understand	4.41 ± 0.74					1	**0.650****	**0.568****	0.128	−0.023
Trust	4.38 ± 0.70						1	**0.580****	**0.159****	−0.047
Feel Informed	4.43 ± 0.68							1	**0.176****	0.004
Feel Unable	3.43 ± 1.26								1	0.106
Age	28.54 ± 8.01									1

**Bold values indicate statistical significance ($p < 0.05$)

Table 6 Results of the ordinal logistic regression

		See		Believe		Understand		Trust		Feel informed		Feel unable	
		LD	95% CI	LD	95% CI	LD	95% CI	LD	95% CI	LD	95% CI	LD	95% CI
Gender	Male (Ref: female)	0.162	−0.330, −0.679	0.158	−0.343, −0.664	0.373	−0.106, −0.872	0.177	−0.326, −0.704	0.404	−0.081, −0.943	**0.562**	**0.131, –1.038**
Education	Primary school (Ref: universty degree)	−0.349	−1.057, −0.301	−0.24	−0.943, −0.438	−0.434	−1.195, −0.175	**−0.663**	**−1.364, −0.003**	−0.376	−1.133, −0.362	**0,830**	**0.221, −1.426**
Age	18–29 (Ref: 40 +)	0.198	−0.523, −0.963	0.372	−0.685, −1.454	−0.524	−1.573, −0.346	−0.063	−0.868, −1.016	−0.388	−1.443, −0.634	−0.584	−1.440, − 0.198
	30–39 (Ref: 40 +)	−0.06	−0.871, −0.818	0.033	−1.062, −1.203	−0.836	−1.954, −0.138	−0.245	−1.188, −0.914	−0.669	−1.737, −0.378	−0.21	−1.114, − 0.625

Bold values indicate statistical significance ($p < 0.05$), (ref. = reference)

LD scale difference, *CI* confidence intervals

toward the potential of AI in dentistry may thus be reduced through additional education in this area. Such education would also facilitate the process of making AI an accepted tool in practitioners' daily routines [20].

The present study also evaluated the trust of the patients in their dentists using the DTS. This trust was high for both traditional and AI-based forms of diagnosis and decision-making; in general, the patients had confidence in their dentist. Additionally, it was determined that as the trust in the decision-making of the dentist using conventional methods increased, so did the trust in the dentist's decision-making using AI-based methods also increased. Similar findings about trust in dentists were obtained in previous studies [15, 21]. Trust is an intricate and multifactorial concept, and the complex way in which it relates to other components and variables over the course of time is not well understood [15]. The primary distinction between trust in technological systems (such as an AI-based program) and interpersonal trust (such as that between a dentist and a patient) is the absence of intentionality. A machine's functionality and dependability are what inspire trust in it [12]. In our study, the patients' trust in AI may have been due to the anticipation that this technology will make useful recommendations concerning the patient's health, or will at least not be harmful, allowing for risks to be taken based on this expectation [12]. In any case, there can be substantial consequences from a lack of trust in conventional or AI-based communication, such as treatment suggestions not being followed, care not being viewed as effective, self-reported health improvements, and increased disagreements with practitioners [15]. Therefore, it has been argued that patients' confidence and trust should be first be measured before steps are implemented to improve these [15].

The finding of the present study that more educated patients, such as those with undergraduate and postgraduate degrees, had more trust in AI-based diagnosis was similar to those of previous studies [12, 22]. It would be logical to predict that trust in AI-based diagnosis will increase, as more educated patients are likely to be more technologically minded and have more familiarity with AI and more knowledge about the areas in which it is used [22].

Like all research, the present study has some limitations. First, it is one of the few studies that has examined the attitudes and expectations of patients regarding AI-based diagnosis in dentistry, so we used, with permission, the available (but not necessarily validated) scales from peer-reviewed research [12]. Also assessing patients' concerns about a topic they may not fully understand, such as the use of AI in diagnosing occlusal dental caries, could potentially lead to subjective results. So, the representativeness of this cross-sectional study should also be regarded with caution. Second, even though the size of the sample was reasonable and while there was sufficient power for the detection of significant differences between scenarios, larger sample sizes may enable more detailed subgroup analyses. In addition, the study focused on the use of AI in 2D radiography; it should be noted that there are various diagnostic tools for detection of caries, e.g., 2D vs. 3D radiography, and that the detectability of caries varies between different studies [23]. In our study, DTS was used, which is a specific set of 11 items based on the original physicians' scale developed by Hall et al. The complexity of the concept of "trust" is necessarily simplified by doing this, and the heterogeneous nature of the concept and the presence of other conceptualizations in the literature should be considered. Furthermore, the factors and issues related to trusting dentists may differ in both type and extent between individuals [15]. Finally, the present study focused only on patients' perceptions and attitudes and did not examine dentists' perceptions and attitudes. There is a lack of information in the literature regarding the dentist's perceptions and attitudes on artificial intelligence, and this should be focused on. The use of artificial intelligence in dentistry is becoming increasingly popular, so the effect on both dentists and patients should be examined in detail.

To summarize, this study helps to understand the attitudes of the patients toward Al-based and conventional forms of diagnosis. While there is currently a great deal of active discussion about how AI-based diagnosis may revolutionize dental practice, there are still concerns about how patients establish trust in such scenarios. Dentists should thus use AI-based tools to enhance communication between patients and providers, if possible. Such tools are likely to become increasingly important in clinical dentistry in the future [12]. More specifically, prospective studies could also be implemented to increase patients' trust in AI-based diagnosis in dental practices.

Conclusion

According to the results obtained:

- Overall, the patients' trust was influenced by the implementation of an AI-based diagnosis, and patients exhibited a positive attitude to the use of AI in dental practice.
- The majority of the patients in the present study stated that they generally trusted their dentists and exhibited more agreement than disagreement with respect to the numerous topics featured on the DTS.
- Patients with undergraduate and postgraduate degrees had more trust in AI-based diagnosis.

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Data availability The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declarations

Conflict of interest The authors declare no competing interests.

Ethics approval and consent to participate Ethical approval (2023.01.03–1333) for this cross-sectional study was granted by the Ethics Committee of Ankara Yıldırım Beyazit University. All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all patients for being included in the study. This article does not contain any studies with human or animal subjects performed by the any of the authors.

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